

TBK

TIEDTKE - BÜHLING - KINNE & PARTNER (GbR)

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TBK-Patent, Bavariaring 4-6, 80336 München, Tel.: +49 89 544690, Fax: +49 89 532611 (G3) +49 89 5329095 (G3+G4), postoffice@tbk-patent.de

VIA FAX AND MAIL (including 9 pages in total)

TBK-Patent POB 20 19 18 80019 München

PRV InterPat

Box 5055

SE-102 42 Stockholm

Patentanwälte

Dipl.-Ing. Reinhard Kinne
Dipl.-Ing. Hans-Bernd Pellmann
Dipl.-Ing. Klaus Grams
Dipl.-Ing. Aurel Vollnhals
Dipl.-Ing. Thomas J.A. Leson
Dipl.-Ing. Dr. Georgi Chivarov
Dipl.-Ing. Matthias Grill
Dipl.-Ing. Alexander Kühn
Dipl.-Ing. Rainer Böckelen
Dipl.-Ing. Stefan Klingele
Dipl.-Chem. Stefan Bühling
Dipl.-Ing. Ronald Roth
Dipl.-Ing. Jürgen Faller
Dipl.-Ing. Hans-Ludwig Trösch

Rechtsanwälte

Michael Zöbisch

June 9, 2004

PCT-Patent Application No.: PCT/IB02/02428

Nokia Corporation et al.

Our ref: WO 33902

(Frist: 17.06. Eing.)

Reference is made to the Written Opinion dated February 17, 2004.

Enclosed herewith the following documents are filed:
claims 1 to 7, replacing claims 1 to 9 as previously on
file.

Basis of Amendment:

Claims 1 to 7 as filed herewith are based on claims 1 to 9
as originally filed as follows:

- new claim 1 combines the features of original claims 1, 3
and 4;
- new claim 2 corresponds to original claim 2; and
- new claims 3 to 7 correspond to original claims 5 to 9
with the claim numbering and dependencies being
accordingly renumbered and adapted to the new claim 1.

Dresdner Bank, München
Deutsche Bank, München
Postbank, München
Mizuho Corp. Bank, Düsseldorf
UFJ Bank Limited, Düsseldorf
Steuernr.: 9 148/641/28007 Ust-ID/VAT: DE 1307 480 35

Kto. 3939 844
Kto. 2861 060
Kto. 6704 3804
Kto. 810 423 3007
Kto. 500 047

BLZ 700 800 00
BLZ 700 700 24
BLZ 700 100 80
BLZ 300 207 00
BLZ 301 307 00

IBAN-Nr.: DE47 7008 0000 0393 9844 00
IBAN-Nr.: DE14 7007 0024 0286 1060 00
IBAN-Nr.: DE04 7001 0080 0067 0438 04
IBAN-Nr.: DE75 3002 0700 8104 2330 07
IBAN-Nr.: DE09 3013 0700 0000 5000 47

BIC: DRES DE FF 700
BIC: DEUT DE DB MUC
BIC: PBNK DE FF
BIC: MHCB DE DD
BIC: SANW DE DX

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Novelty/Inventive Step:

The International Preliminary Examining Authority raised objections against the inventive merit of the claimed invention with the above-referenced Written Opinion. These objections were based on document D2, i.e. EP-A2-0 431 956.

Document D2 discloses a cellular radio telephone diagnostic system. According to document D2, base stations monitor the radio signal quality of calls initiated by the mobiles and, based thereon, establish a radio coverage map. As a prerequisite of the operation principle underlying the teaching of document D2 (see for example abstract) a call has to be received by a base station from a respective mobile unit. Hence, only ongoing calls are monitored.

However, apparently, the thus obtained knowledge for network performance analysis as obtained according to the teaching of document D2 is incomplete in that only ongoing calls are evaluated.

Therefore, it is an object of the present invention to improve such a network performance analysis.

According to the present invention, this object is achieved by a method for communication network performance analysis as defined in claim 1. By virtue thereof, not only ongoing calls can be monitored according to the present invention, i.e. those calls, for which a service request (call establishment) was successful, but also refused service requests can be exploited for communication network performance analysis. Stated in other words, by virtue of the present invention as claimed, non-service maps (service refusal area maps) can be generated (see for example pages

10 to 11, Figure 5 of the present application), indicating which service request was refused in which area.

Thus, due to evaluating the success of each request, information can be obtained in terms of whether a certain area requires network maintenance or improvement because too many requests for a specific service were denied.

Original claim 1 was not objected to for lack of novelty with the above-referenced Written Opinion. Hence, also present claim 1 as submitted to file herewith is deemed to be novel over the disclosure of document D2, considering that additional features were included now to claim 1.

Still further, the thus defined method for communication network performance analysis is also deemed to be based on an inventive step.

Namely, document D2 does not show or render obvious/suggest to collect data of unsuccessful call attempts. Rather, document D2 merely teaches to establish radio coverage maps of successful ongoing calls. "Complementary" areas according to document D2, however, cannot be distinguished in terms of whether there is no call because of no request for a call in this area, or because a request was denied.

Hence, it is evident that document D2 neither discloses nor renders obvious the claimed subject-matter. Therefore, a skilled person could not be inspired by the disclosure of document D2 in such a manner so as to arrive at the claimed subject-matter without involving own inventive skill.

Hence, the claimed subject-matter is not only novel, but also based on inventive step.

Reconsideration of the claims as on file in connection with the presented supporting arguments is thus deemed to lead to a positive International Preliminary Report on Patentability under chapter II of the PCT for the present case.

Jürgen Faller
Patentanwalt
TBK-Patent

Enclosures:

- Claims 1 to 7 (amendment sheet)
- Claim 1 to 7 (fair copy)

Enclosure of June 9, 2004

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CLAIMS 1 to 7 (Claim amendment sheet)

10

1. A method for communication network performance analysis comprising the steps of

15

a) acquiring and storing information related to
a1) service requests issued by terminals attached
to said network,

a2) positions of said requesting terminals, and
a3) establishment of the requested service for
said terminals,

20

b) matching, based on the position information, said
information to a grid of unit areas, the grid of
unit areas representing a geographical region in
which said network is operated,

c) processing said information per unit area, and

d) ~~d)~~ outputting said processed information,

25

e) wherein said information related to the
establishment of the service comprises at least a
success indication indicating that said service was
successfully established or not and at least one
service attribute, and wherein

30

f) said processing comprises a step of logically
combining said service request information and said
success information.

35

2. A method according to claim 1, further comprising the
step of

ge) modifying communication network operating
parameters based on said outputted processed
information.

3. A method according to claim 1, wherein
said processing comprises a further step of summing
said at least one service attribute parameter.

5

4. A method according to claim 1, wherein
said processing comprises the further steps of
sorting said stored information according to said
at least one service attribute, thereby obtaining a
10 plurality of information sets, each being
representative of an individual service
distinguishable by said at least one service
attribute, and

15 selecting one of said information sets according
to the service attribute for being output.

5. A method according to claim 1, 2, 3, or 4, wherein
said acquired information is stored for a
predetermined time.

20

6. A method according to claim 1, 2, 3, or 4, wherein
said processing comprises a step of filtering said
stored information using a selectable time window.

25 7. A method according to claim 6 when dependent on claim 3,
wherein said summed at least one service attribute
parameter is divided by the time period defined by said
selected time window.

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CLAIMS 1 to 7

10

1. A method for communication network performance analysis comprising the steps of

15

a) acquiring and storing information related to
a1) service requests issued by terminals attached
to said network,

a2) positions of said requesting terminals, and

a3) establishment of the requested service for
said terminals,

20

b) matching, based on the position information, said
information to a grid of unit areas, the grid of
unit areas representing a geographical region in
which said network is operated,

c) processing said information per unit area, and

d) outputting said processed information,

25

e) wherein said information related to the
establishment of the service comprises at least a
success indication indicating that said service was
successfully established or not and at least one
service attribute, and wherein

30

f) said processing comprises a step of logically
combining said service request information and said
success information.

35

2. A method according to claim 1, further comprising the
step of

g) modifying communication network operating
parameters based on said outputted processed
information.

~~3. A method according to claim 1, wherein~~

~~said information related to the establishment of the
service comprises at least a success indication indicating
5 that said service was successfully established or not and
at least one service attribute.~~

~~4. A method according to claim 3, wherein~~

~~said processing comprises a step of logically
10 combining said service request information and said success
information.~~

35. A method according to claim 14, wherein

said processing comprises a further step of summing
15 said at least one service attribute parameter.

46. A method according to claim 14, wherein

said processing comprises the further steps of
sorting said stored information according to said
20 at least one service attribute, thereby obtaining a
plurality of information sets, each being
representative of an individual service
distinguishable by said at least one service
attribute, and

25 selecting one of said information sets according
to the service attribute for being output.

57. A method according to claim 1, 2, 3, or 4, ~~5, or 6~~
wherein

30 said acquired information is stored for a
predetermined time.

68. A method according to claim 1, 2, 3, or 4, ~~5, or 6~~
wherein

said processing comprises a step of filtering said stored information using a selectable time window.

5 79. A method according to claim 68 when dependent on claim 35, wherein said summed at least one service attribute parameter is divided by the time period defined by said selected time window.